

### **Remarks**

No new matter has been added. Entry of the amendment is respectfully requested. Reconsideration is respectfully requested. It is believed that this Amendment places the application in condition for allowance.

The arguments for allowability of claims 2-7 over U.S. Patent No. 3,192,059 could not have been presented at an earlier time because no prior art was cited against the claims in the first Office action. The subject matter encompassed by the originally filed “use” claim 1 was not substantially altered by the submission of new claim 7, directed to a process. For example, claim 1 provided a composition for a MZA brick, which was carried over to new claim 7. Claim 1 recited that the bricks are “at least partially operated using a reducing atmosphere” which is substantially repeated in new claim 7. Thus, the Examiner could have provided a more complete examination on the original claims. In *In re Phillips*, the Court noted that “[P]iecemeal examination is to be avoided.” 608 F.2d 879, 883 n.6, 203 USPQ 971, 975 n.6 (CCPA 1979). This amendment therefore presents Applicants’ first opportunity to address issues relating to the prior art.

Applicants request entry and consideration of this Amendment, or alternately, a withdrawal of the final action as being premature.

### **Claim Status**

Claims 4-6 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2,3, and 5-7 stand rejected under 35 USC § 102(b) as anticipated by or, in the alternative, under 35 USC § 103(a) as obvious over Good et al. (US. Patent 3,192,059).

### **The Claim Amendments**

Claims 4, 5 and 6 have been amended to overcome the indefiniteness rejection. In particular, in each case the definite article has been replaced with an indefinite article to supply an antecedent basis for the claimed feature.

### **The Rejections**

#### **35 U.S.C. § 102 Rejections: The Applicable Legal Standards**

Anticipation pursuant to 35 U.S.C. § 102 requires that a single prior art reference contain all the elements of the claimed invention arranged in the manner recited in the claim. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193, 198 (Fed. Cir. 1983).

Anticipation under 35 U.S.C. § 102 requires in a single prior art disclosure, each and every element of the claimed invention arranged in a manner such that the reference would literally infringe the claims at issue if made later in time. *Lewmar Marine, Inc. v. Barient, Inc.*, 822 F.2d 744, 747, 3 USPQ 2d 1766, 1768 (Fed. Cir. 1987).

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

### **35 U.S.C. § 103 Rejections: The Applicable Legal Standards**

The Office has the responsibility to present a *prima facie* case of obviousness under 35 U.S.C. § 103. An Applicant is entitled to a patent if the Office fails to establish a *prima facie* case of obviousness. *In re Oetiker*, 24 U.S.P.Q. 2d 1443 9Fed. Cir. 1992). In determining obviousness under 35 U.S.C. § 103, the invention must be considered “as a whole.”

Any modification of the cited reference in order to arrive at Applicant’s invention must be motivated by the cited art. *In re Deminski*, 230 U.S.P.Q. 313 (Fed. Cir. 1986). Applicant’s own disclosure may not serve as a template to piece together the teachings of the prior art to render the claimed invention obvious. *In re Fitch*, 23 U.S.P.Q. 2d 1780 (Fed. Cir. 1992). There must be a reason or suggestion in the prior art for selecting the claimed procedure, other than knowledge learned from Applicant’s disclosure. *In re Dow Chemical*, 5 U.S.P.Q. 2d 1529 (Fed. Cir. 1988). Further, the motivation for modifying a reference cannot be found if the reference actually “teaches away” from the claimed invention. *In re Gurley*, 31 U.S.P.Q. 2d 130 (Fed. Cir. 1994).

#### **Claim 7**

Claim 7 is directed to a process comprising:

- (a) installing a regenerator chamber of a glass melting furnace with a plurality of magnesia-zirconia bricks comprising 5 to 35 weight-percent  $ZrO_2$ , 65 to 95 weight-percent  $MgO$ , *less than 1.0 weight-percent  $SiO_2$* , and at most 5 weight-percent other components; and

- (b) at least partially operating the regenerator chamber of the glass melting furnace *using a reducing atmosphere*.

Claim 7 may be clearly distinguished from Good (U.S. Patent 3,192,059) in at least three significant ways. First, the bricks utilized in the claimed process include *less than 1.0 weight-percent SiO<sub>2</sub>*. The batch disclosed in Good includes 60 to 90 % MgO and 10-40 % Zircon. Utilizing TABLE II, the SiO<sub>2</sub> content of the disclosed Zircon is 32.3%. Thus, Zircon in the range of 10-40 % yields an overall SiO<sub>2</sub> content within the batch of between 3.23 and 12.92 %. The Examiner's own example illustrates SiO<sub>2</sub> at 3% (page 3, lines 1-2). Therefore, the claimed brick composition is not anticipated by the reference.

Further, there is no teaching or suggestion in the reference to provide bricks which have less than 1.0 weight percent SiO<sub>2</sub>. In all the examples, the SiO<sub>2</sub> content of Zircon is reportedly 32.3%, yielding the batch percentages given above. The reference itself teaches that similar compositions exhibit significantly different physical properties (column 2, lines 13-17). The teachings of Good therefore cannot be extended to include the claimed SiO<sub>2</sub> range. Thus, the claimed invention is not obvious in view of Good.

Second, claim 7 includes a process step of at least partially operating the regenerator chamber of the glass melting furnace *using a reducing atmosphere*. There is no teaching or suggestion in Good to anticipate this step, or to render it obvious. In fact, with reference to Column 3, lines 57-75, Good describes a qualitative test wherein the bricks are subjected to "products of combustion, plus slight excess air on the heating cycle and straight air on the cooling cycle." The slight excess air and the straight air are associated with an *oxidizing*

*atmosphere*, which clearly teaches away from the claimed process.

As disclosed on pages 4 and 5 of Applicants' specification, it has been observed that subjecting prior refractory materials to a reducing atmosphere disadvantages the service life of the refractory material. However, bricks formed by the claimed composition, and used in a claimed reducing atmosphere have increased service life.

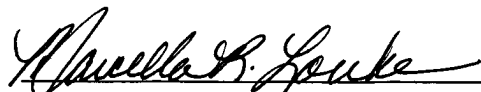
Third, Applicants' raw materials are necessarily different from the materials taught in Good. For example, Applicants claim a composition with a minimum of 5%  $\text{ZrO}_2$  and less than 1%  $\text{SiO}_2$ . However, 5 weight % of the Zircon disclosed in Good yields at least 1.61 weight %  $\text{SiO}_2$  in the batch composition. Thus, Applicants' disagree with the Examiner's assertions that the claimed composition appears to be substantially the same as a composition disclosed in the prior art.

#### **Claims 2, 3 and 5-6**

Each of the claims 2, 3 and 5-6 ultimately depend from claim 7 which has been shown to be allowable over the cited art. It is believed that claims 2, 3 and 5-6 are thus allowable on that basis.

The undersigned will be happy to discuss any aspect of the Application by telephone at the Office's convenience.

Respectfully submitted,

  
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